IN THE CLAIMS

1. (original) A composition for dyeing a keratinous fiber comprising:

a) at least one oxidation base or direct dye or a mixture thereof;

b) at least one compound of formula (I):

$$R\text{-}(CHOH)_4\text{-}CO_2X \qquad (I),$$

wherein

R represents a CH_2OH or CO_2X group, and

X represents a hydrogen atom or a monovalent or divalent cation chosen from an alkali metal, alkaline-earth metal, transition metal, organic amine or ammonium ion, and

c) a suitable medium,

wherein when R is a CH_2OH group, said compound of formula (I) is not gluconic acid or its salt.

2. (original) The composition of claim 1, wherein said keratinous fiber is hair.

3. (original) The composition of claim 1, wherein said compound of formula (I) is mannonic acid, altronic acid, idonic acid, galactonic acid, talonic acid, gulonic acid, allonic acid, or an alkali metal salt thereof, an alkaline-earth metal salt thereof, a transition metal salt thereof, an organic amine salt thereof, an ammonium salt thereof, or a mixture thereof.

4. (original) The composition of claim 1, wherein said R is not a CH_2OH group.

5. (original) The composition of claim 1, wherein said compound of formula (I) is mucic acid, glucaric acid, mannaric acid, altaric acid, idaric acid, talaric acid, gularic acid allaric acid, an alkali metal salt thereof, an alkaline-earth metal salt thereof or a transition metal salt thereof, an

organic amine salt thereof, an ammonium salt thereof or a mixture thereof.

6. (original) The composition of claim 5, wherein said compound of formula (I) is mucic acid.

7. (original) The composition of claim 1, wherein the content of said compound of formula (I) is from 0.001% to 10% by weight relative to the total weight of the composition.

8. (original) The composition of claim 7, wherein said content of said compound of formula (I) is from 0.001% to 5% by weight relative to the total weight of the composition.

9. (original) The composition of claim 1, wherein said oxidation base is para-phenylenediamine, bis(phenyl)alkylenediamine, para-aminophenol, ortho-aminophenol or heterocyclic base, or a salt thereof with an acid or with an alkaline agent, or a mixture thereof.

10. (original) The composition of claim 1, wherein the content of said oxidation base is from 0.0005% to 12% by weight relative to the total weight of the composition.

11. (original) The composition of claim 10, wherein said content of said oxidation base is from 0.005% to 6% by weight relative to the total weight of the composition.

12. (original) The composition of claim 1, further comprising at least one coupler.

13. (original) The composition of claim 12, wherein said coupler is a meta-phenylenediamine, meta-aminophenol, meta-diphenol or heterocyclic coupler, ora salt thereof with an acid or with an alkaline agent, or a mixture thereof.

14. (original) The composition of claim 12, wherein the content of said coupler is from 0.0001% to 10% by weight relative to the total weight of the composition.

15. (original) The composition of claim 14, wherein said content of said coupler is from 0.005% to 5% by weight relative to the total weight of the composition.

16. (original) The composition of claim 1, wherein said direct dye is a nitrobenzene dye, azo dye, anthraquinone dye, naphthoquinone dye, benzoquinone dye, phenothiazine dye, indigoid dye, xanthene dye, phenanthridine dye, phthalocyanin dye or a dye derived from triarylmethane, or a mixture thereof.

17. (original) The composition of claim 1, wherein the content of said direct dye is from 0.0005% to 12% by weight relative to the total weight of the composition.

18. (original) The composition of claim 17, wherein said content of said direct dye is from 0.005% to 6% by weight relative to the total weight of the composition.

19. (original) The composition of claim 1, wherein said suitable medium is an aqueous medium.

20. (original) The composition of claim 19, wherein said aqueous medium comprises water and optionally at least one cosmetically acceptable organic solvent.

21. (original) The composition of claim 20, wherein said cosmetically acceptable organic solvent is a linear or branched, saturated or unsaturated, monoalcohol or diol containing from 2 to 10 carbon atoms, or an aromatic alcohol, glycol or glycol ether, or a mixture thereof.

22. (original) The composition of claim 21, wherein the content of said cosmetically acceptable organic solvent is from 0.5% to 20% by weight relative to the total weight of the composition.

23. (original) The composition of claim 22, wherein said content of said cosmetically acceptable organic solvent is from 2% to 10% by weight relative to the total weight of the composition.

24. (original) The composition of claim 1, further comprising a conditioning polymer.

25. (original) The composition of claim 24, wherein said conditioning polymer is a cationic or amphoteric conditioning polymer or a mixture thereof.

26. (original) The composition of claim 24, wherein the content of said conditioning polymer is from 0.01% to 10% by weight relative to the total weight of the composition.

27. (original) The composition of claim 26, wherein said content of said conditioning polymer is from 0.05% to 5% by weight relative to the total weight of the composition.

28. (original) The composition of claim 1, further comprising a surfactant.

29. (original) The composition of claim 28, wherein said surfactant is nonionic, anionic, cationic, amphoteric or zwitterionic surfactant, or a mixture thereof.

30. (original) The composition of claim 28, wherein the content of said surfactant is from 0.01% to 40% by weight relative to the total weight of the composition.

31. (original) The composition of claim 30, wherein said content of said surfactant is from 0.1% to 30% by weight relative to the total weight of the composition.

32. (original) The composition of claim 1, further comprising at least one amphiphilic polymer with a hydrophobic chain.

33. (original) The composition of claim 32, wherein said at least one amphiphilic polymer with said hydrophobic chain is nonionic, anionic, cationic or amphoteric polymer with a hydrophobic chain.

34. (original) The composition of claim 32, wherein the content of said amphiphilic polymer with said hydrophobic chain is from 0.005% to 20% by weight relative to the total weight of the composition.

35. (original) The composition of claim 34, wherein said content of said amphiphilic polymer with said hydrophobic chain

is from 0.1% to 10% by weight relative to the total weight of the composition.

36. (original) The composition of claim 1, further comprising at least one thickener.

37. (original) The composition of claim 36, wherein said thickner is a water-soluble thickening polymer not containing a hydrophobic chain.

38. (original) The composition of claim 36, wherein the content of said thickener is from 0.05% to 20% by weight relative to the total weight of the composition.

39. (original) The composition of claim 38, wherein said content of said thickener is from 0.1% to 10% by weight relative to the total weight of the composition.

40. (original) The composition of claim 1, further comprising at least one acidifying or basifying agent.

41. (original) The composition of claim 40, wherein the content of said acidifying or basifying agent is from 0.01% to 30% by weight relative to the total weight of the composition.

42. (original) The composition of claim 1, wherein said composition is in the form of liquid, cream, gel, or paste.

43. (original) The composition of claim 1, further comprising at least one material selected from the group consisting of a coupler, conditioning polymer, surfactant, amphiphilic polymer with a hydrophobic chain, thickener, acidifying agent and basifying agent.

44. (original) The composition of claim 43, wherein said coupler is a meta-phenylenediamine, meta-aminophenol, meta-diphenol or heterocylic coupler or a salt thereof with an acid or with an alkaline agent, and is provided in an amount of from 0.0001% to 10% by weight relative to the total weight of the composition.

45. (original) The composition of claim 43, wherein said conditioning polymer is a cationic or amphoteric conditioning

polymer or a mixture thereof, and is provided in an amount of from 0.01% to 10% by weight relative to the total weight of the composition.

46. (original) The composition of claim 43, wherein said surfactant is a nonionic, anionic, cationic, amphoteric or zwitterionic surfactant or a mixture thereof, and is provided in an amount of from 0.01% to 40% by weight relative to the total weight of the composition.

47. (original) The composition of claim 43, wherein said amphiphilic polymer with a hydrophobic chain is a nonionic, anionic, cationic or amphoteric polymer with a hydrophobic chain, and is provided in an amount of from 0.005% to 20% by weight relative to the total weight of the composition.

48. (original) The composition of claim 43, wherein said thickener is a water-soluble thickening polymer not containing a hydrophobic chain, and is provided in an amount of from 0.05% to 20% by weight relative to the total weight of the composition.

49. (original) The composition of claim 43, wherein the content of said acidifying agent or said basifying agent is from 0.01% to 30% by weight relative to the total weight of the composition.

50. (original) The composition of claim 1, further comprising at least two materials selected from the group consisting of a coupler, conditioning polymer, surfactant, amphiphilic polymer with a hydrophobic chain, thickener, acidifying agent and basifying agent.

51. (original) The composition as in claim 43 or 50, wherein said composition is in the form of liquid, cream, gel or paste.

52. (original) A ready-to-use composition comprising:

a) said composition as in claim 1 , 43 or 50, and

b) at least one oxidizing composition comprising at least one oxidizing agent in a medium suitable for dying.

53. (original) The ready-to-use composition of claim 52, wherein said oxidizing agent is hydrogen peroxide, urea peroxide, alkali metal bromate, persalt, peracids, or enzyme, or a mixture thereof.

54. (original) The ready-to-use composition of claim 53, wherein said persalt is perborate, percarbonate or persulphate.

55. (original) The ready-to-use composition of claim 53, wherein said enzyme is peroxidase, or two electron or four electron oxidoreductase.

56. (original) The ready-to-use composition of claim 52, wherein the content of said oxidizing agent is from 0.1% to 30% by weight relative to the weight of the oxidizing composition.

57. (original) The ready-to-use composition of claim 56, wherein said content of said oxidizing agent is from 0.5% to 20% by weight relative to the total weight of the oxidizing composition.

58. (original) The ready-to-use composition of claim 57, wherein said content of said oxidizing agent from 5% to 20% by weight relative to the oxidizing composition.

59. (original) A process for dyeing a keratinous fiber comprising:

a) mixing said composition as in claim 1, 43 or 50 and optionally an oxidizing composition comprising at least one oxidizing agent in a medium suitable for dyeing;

b) applying said mixed composition to said keratinous fiber shortly after mixing;

c) leaving said mixed composition on said keratinous fiber for sufficient time to obtain a desired coloration;

d) rinsing said keratinous fiber to remove said mixed composition from said keratinous fiber;

e) optionally washing and rinsing said keratinous fiber; and

f) optionally drying said keratinous fiber.

60. (original) The process of claim 59, wherein said keratinous fiber is hair.

61. (original) A device for dyeing a keratinous fiber comprising:

a) at least two compartments, wherein

- one of said at least two compartments comprises said composition as in claim 1, 43 or 55, and
- another one of at least two compartments comprises an oxidizing composition comprising at least one oxidizing agent in a medium that is suitable for dyeing.